MEMORANDUM

TO: Roy Buxton, Engineering Department Manager

FROM: Jim Spencer, Senior Energy Engineer

DATE: October 22, 2002

RE: Tree Conditions in MidAmerican Energy Company's Illinois Service Territory

1. Introduction

On September 19, 2002, ICC Staff (Jim Spencer and John Stutsman) performed random inspections of tree conditions near MidAmerican Energy Company (MEC) electric lines in MEC's Illinois service territory. Staff performed the inspections by driving around the areas chosen and looking at trees near MEC overhead electric lines without regard to circuit identification and without the use of circuit maps. This memorandum documents the results of the field survey and Staff's assessment of the state of tree trimming on that date in Rock Island, Moline, East Moline, and Silvis, Illinois (all served electrically by MEC).

This survey completed a series of inspections of tree conditions near overhead electric lines owned by the six major investor-owned electric utilities in Illinois.

2. Findings

Overall, Staff found tree conditions near electric lines in MEC Illinois service territory to be much better than the conditions found at most of the other utilities inspected. There were some problem areas, however, which Staff noted and photographed. These relatively small isolated areas contained many tree conflicts with MEC's primary conductors, including several instances of tree contacts with the energized wires evidenced by burning of the trees. Following completion of the inspections, Staff obtained additional information from MEC about the circuits in each of the problem areas, including the involved circuit number, the date tree trimming was last completed, and the next planned trimming completion date.

In Rock Island, Staff noted several tree conflicts at 1843 12th Street (Circuit 13-38-2) and along the alley west of 38th Street from 18th Avenue to 12th Avenue (Circuit 4-F-2). Figure 1 shows maple trees growing into the 3-phase 13.2 kV primary, with some burning of the trees, at 1843 12th Street. MEC indicated that tree trimming was last completed on this circuit in the fourth quarter of 2000, and is planned to be completed again in 2003.

Figure 1
Maple trees into 3-phase 13.2 kV primary, with burning
Circuit 13-38-2, Rock Island

Figures 2 and 3 show MEC's 4 kV primary going through maple trees in the alley west of 38th Street, Rock Island. MEC claims that tree trimming was completed on this circuit on January 18, 2002, and is planned again for 2004.

Figure 2
3-phase 4 kV primary through maple tree
Circuit 4-F-2, Rock Island

Figure 3
3-phase 4 kV primary through maple tree
Circuit 4-F-2, Rock Island

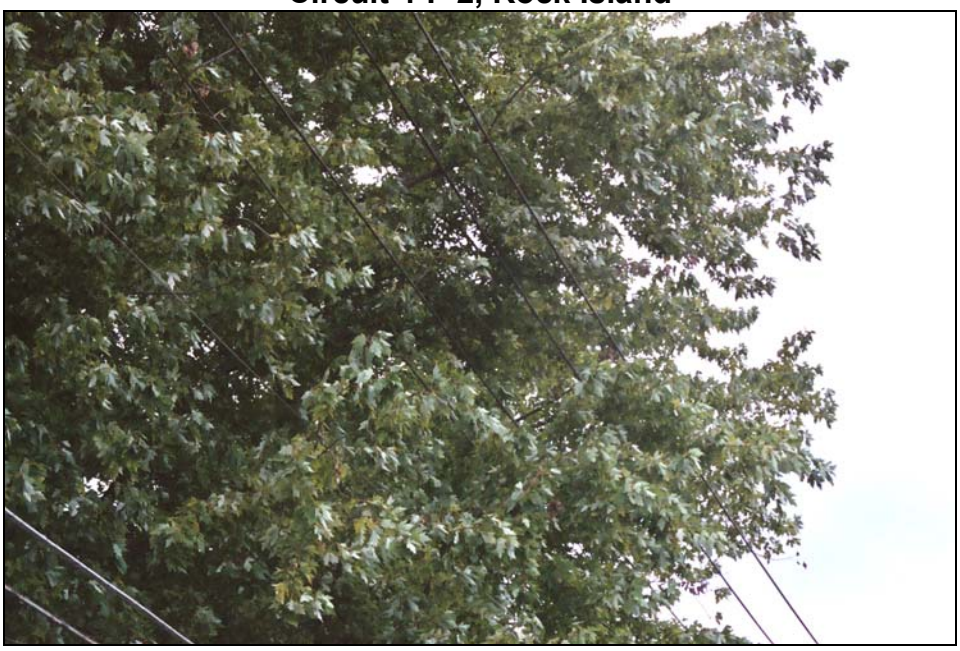


Figure 4 shows an ash tree growing into MEC's 4 kV primary at a 3-phase transformer bank in the alley west of 38th Street, Rock Island. Tree trimming was completed on this circuit on January 18, 2002, and is planned again for 2004.

Figure 4
Ash tree growing into 4 kV primary at a transformer bank
Circuit 4-F-2, Rock Island

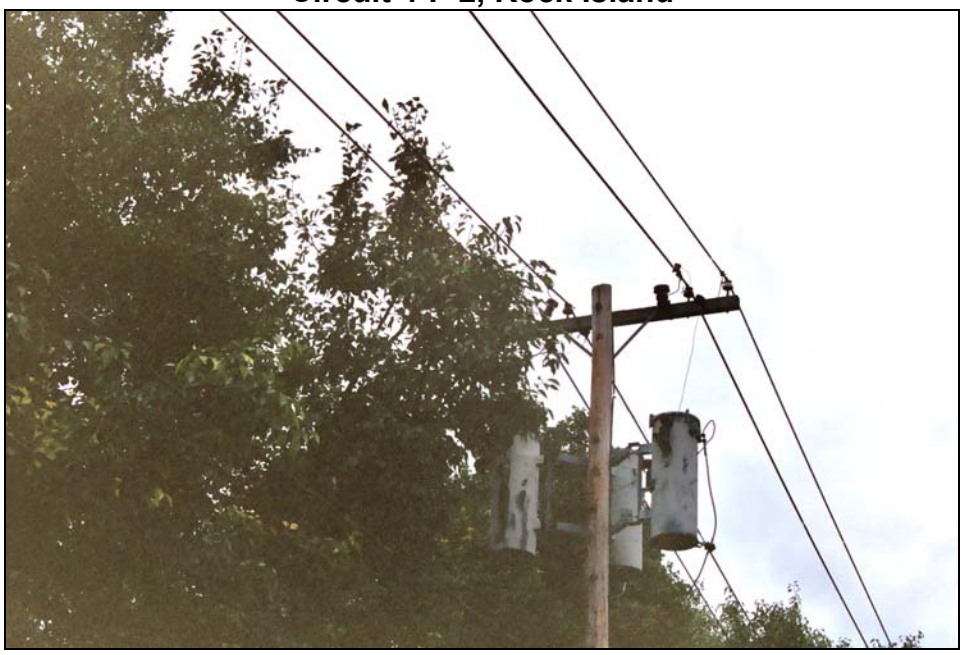


Figure 5
Primary burning maple tree
Circuit 13-PU-1, Moline

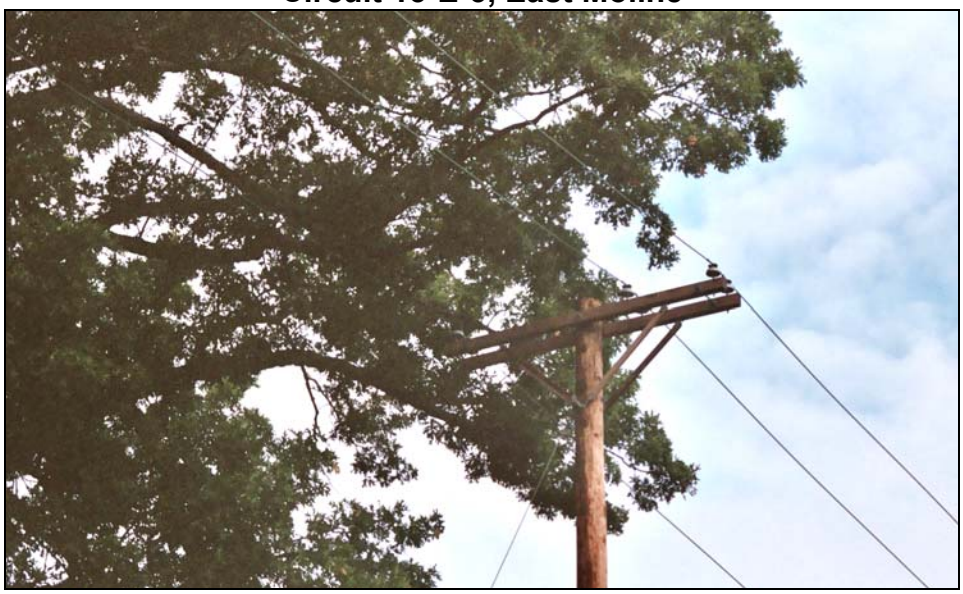
In Moline, Staff noted only two areas of tree conflict with MEC's overhead lines. Figure 5 shows one of these conflicts, across from 1407 18th Avenue. At this location, an MEC double-circuit primary goes through a maple tree, with some evidence of burning. MEC reported that its 13.2 kV Circuit 13-PU-1 at this location was last trimmed on January 16, 2002, and will be trimmed again in 2004.

Staff found tree conflicts at three locations in East Moline, one of which involved a de-energized section of 3-phase primary going through and completely surrounded by trees north of 2617 19th Street. Figure 6 shows 3-phase 13.2 kV Circuit 13-48-3 (or 13-48-4) burning the top of an elm tree on 19th Street north of Route 92. Tree trimming was reported to be currently in progress on this circuit, scheduled for completion by the end of 2002.

Figure 6
13.2 kV primary burning the top of an elm tree
Circuit 13-48-3, East Moline

Figure 7 shows an oak tree growing above and very close to 3-phase 13.2 kV Circuit 13-E-3 at 2015 13th Street, East Moline. MEC reported that tree trimming was last completed on this circuit on February 14, 2002, and is planned again for 2005.

Figure 7
Oak tree above and very close to 13.2 kV primary
Circuit 13-E-3, East Moline



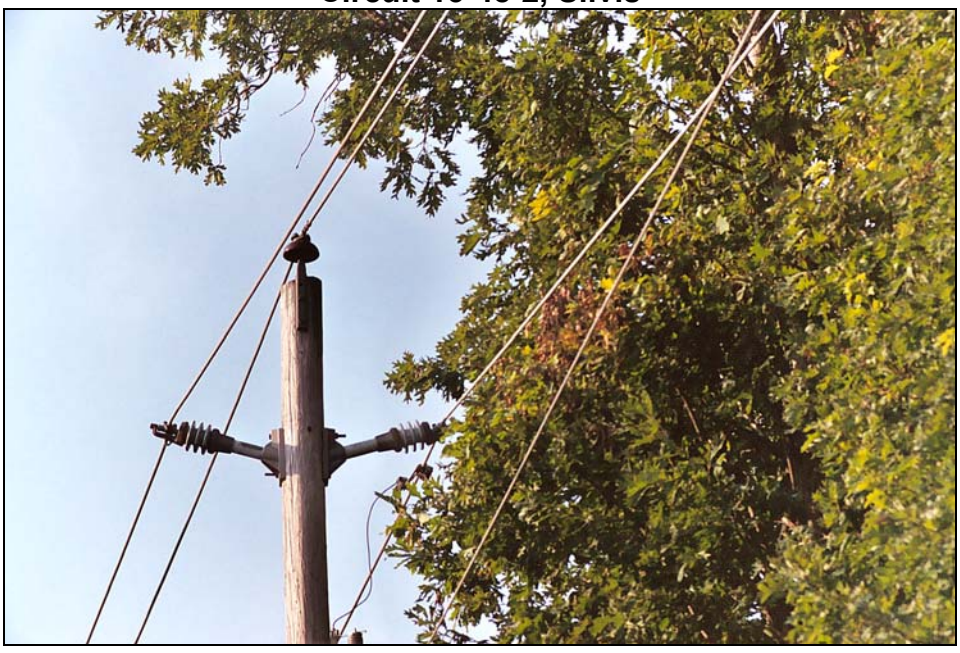
Staff observed tree conflicts at several locations in Silvis. Figure 8 shows 3-phase 13.2 kV Circuit 13-48-3 burning a spruce tree on 10th Street at 10th Avenue. Tree trimming is currently in progress on this circuit, scheduled for completion by the end of 2002.

Figure 8
13.2 kV primary burning spruce tree
Circuit 13-48-3, Silvis

Figures 9 and 10 show 3-phase 13.2 kV Circuit 13-48-2 in oak trees, with burning, at two locations in the alley between 15th & 16th Streets, near 4th Avenue, Silvis. Trees on this circuit are currently being trimmed, scheduled for completion by the end of 2002.

Figure 9
13.2 kV primary in pin oak tree, with burning
Circuit 13-48-2, Silvis

Figure 10
13.2 kV primary burning oak tree
Circuit 13-48-2, Silvis



MEC claims that its Illinois distribution circuits are trimmed on a three-year cycle, and the trimming dates it provided to Staff for the above-discussed circuits are consistent with its claim. The condition of the trees shown in Figures 1 through 10, coupled with the dates MEC claims these trees were last trimmed, however, indicates a problem with the quality of trimming at these locations or that these trees were not trimmed as recently as reported. Staff finds that the condition of trees at these locations is not consistent with a three-year trimming cycle, much less the actual reported trimming completion dates in some cases.

Again, these problem areas represent only a small portion of MEC's total service territory in Illinois, and Staff found the tree conditions in most of MEC's Illinois territory to be very satisfactory. MEC should investigate the problem areas mentioned and determine the cause for the apparent inconsistency of tree trimming in these areas with its otherwise good tree trimming program. It should also take steps to correct these areas and to prevent recurrence of the problem.

3. Recommendations

- MEC should investigate the problem areas discussed in this memorandum to determine the cause of inconsistency of tree trimming in these areas with the rest of its tree trimming program in Illinois.

- MEC should resolve all existing tree clearance problems in its Illinois service territory as soon as possible.

- MEC should assure that all trees in its Illinois service territory are trimmed such that there are no tree contacts with its energized primary conductors before it returns to trim them again.

- ICC Staff should investigate tree conditions in MEC's Illinois service territory again in 2003.